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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/852,445 | 05/09/2001 | Daniel P. Topp | TOPP-P2-US | 5131 |

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| EXAMINER | |
|---|---|
| ODLAND, KATHRYN P | |
| **ART UNIT** | **PAPER NUMBER** |
| 3743 | 14 |

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/852,445 | TOPP, DANIEL P. | |
| | Examiner | Art Unit | |
| | Kathryn Odland | 3743 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *09 May 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) *12-18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 19-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

***Response to After Final Office Action and Interview***

This is a response to the Interview of May 5, 2003 and the After Final Office Action dated May 9, 2003. Applicant during the interview agreed to amend the claims to define over the prior art in order to further prosecution by placing the case in condition for allowance. However, no amendment was received. The examiner attempted to contact applicant's attorney, Mark Garzia, numerous times in June, July, September, November, December and March. Numerous phone messages were left to check the status of the amendment. However, no phone calls were returned. The examiner spoke with Mr. Garzia the week of March 22, 2004. Mr. Garzia stated the amendment was sent in and agreed to fax a copy of the amendment and certificate of mailing. However, as of March 30, 2004, the fax was not received. Again the examiner attempted contact Mr. Garzia and four telephone messages were left with Mr. Garzia on March 29, 2004 to request the fax. However, no return phone call was provided nor a fax. Thus, an office action is necessary. Claims 12-18 are withdrawn from consideration, being drawn to a non-elected group.

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. Applicant, in the After Final Office Action stated that since claims 10 and 11 were inadvertently not addressed in the Non-final Office Action, finality should be withdrawn. The examiner inadvertently did not directly state the rejection of claims 10 and 11.

However, the subject matter of the claims was discussed in the Non-final Office Action. Nonetheless, finality will be withdrawn.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 20, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Rhind.

Regarding claim 1, Rhind discloses a combustion system for use in a gas burning heater having a circularly-shaped burner tube (3a) with a plurality of gas exit holes (5) on one side and means (1) for feeding a controlled amount of gas thereto, as recited in lines 33-54; a burner with a set diameter; a first conical frustum section (such as 14 and associated components where it tapers) having a pre-determined first pattern of orifice ports with a basal end having a diameter proximate the diameter of the burner tube and a smaller diameter distal end, the basal end of the first conical frustum section being attached to the burner tube at a position radially inward from the gas exit holes, as recited in lines 74-89, and seen in figures 1 and 2; and a second conical frustum section (such as 9/10 and associated components) having a pre-determined second pattern of orifice ports having a basal end and a larger diameter distal end where the basal end of the second conical frustum section has a diameter proximate the diameter of the burner tube and is attached to the burner tube proximate the plurality of gas exit

holes at a position radially outward from the gas exit holes, as seen in figures 1 and 2. Element 9/10 and associated components connects to the burner at 5a and has a larger diameter distal end. Further Rhind discloses a first conical frustum section having a pre-determined first pattern of orifice ports, as seen in figure 2 and a first conical frustum section having a basal end having a diameter proximate the diameter of the burner tube where the basal end of the first conical frustum section is attached to the burner tube proximate the plurality of gas exit holes at a position radially inward from the gas exit holes, as seen in figure 2. Given the broad nature of the word "proximate," it can be considered that the frustum section is attached proximate to the plurality of gas exit holes. This was further discussed in the interview and the examiner demonstrated how Rhind accomplished the claim limitations. See also claim 9 of Rhind.

Regarding claim 2, Rhind discloses that as applied to claim 1, as well as, gas exit holes (5) that are equally spaced around the gas tube, as seen in figures 1-2.

Regarding claim 3, Rhind discloses that as applied to claim 2, as well as, gas exit holes (5) that are a predetermined diameter, as seen in figures 1 and 2.

Regarding claim 4, Rhind discloses that as applied to claim 3, as well as, gas exit holes (5) that are orthogonally positioned to a plane defined by the circularly –shaped burner tube, as seen in figures 1-3.

Regarding claims 5 and 6, Rhind discloses that as applied to claim 1, as well as, a predetermined first and/or second pattern of orifice ports that are arranged in a spiral – shaped pattern, as seen in figures 1 and 2.

Regarding claim 20, Rhind discloses combustion system for use in a gas burner having a circularly-shaped burner tube (such as 3a) having a plurality of gas exit holes (such as 5) on one side, where the burner has a diameter determined by the desired output of the gas burner heater (necessary); means for delivering as to the burner (via 1 and associated parts); a first conical frustum section (such as 14 and associated components) having a pre-determined first pattern of orifice ports, the first conical frustum section having a basal end having a diameter proximate the diameter of the burner tube (as discussed above regarding claim 1), the basal end of the first conical frustum section being attached to the burner tube ***proximate*** the plurality of gas exit holes at a position radially inward from the gas exit holes, the first conical frustum section having a converging profile as the distance away from the burner tube increases, as discussed in the interview, above with regard to claim 1, and seen in figure 2. Rhind also discloses a second conical frustum section (such as 9 and /10 and associated components) having a pre-determined second pattern of orifice ports having a basal end having a diameter proximate the diameter of the burner tube, the basal end of the second conical frustum section is attached to the burner tube proximate the plurality of gas exit holes at a position radially outward from the gas exit holes, the second conical frustum section having a diverging profile as the distance away from the

burner tube increases, as discussed in the interview, above with regard to claim 1, and seen in figures 1-3. Rhind further discloses first and second conical frusta section communicating with the burner for mixing the appropriate amount of air to the volume of gas exiting the gas exit holes for defining a combustion chamber within the gas heater, which necessarily occurs given the structure.

Regarding claims 21, Rhind discloses that as applied to claim 20, as well as, predetermined first pattern of orifice ports on the first conical frustum section that include a plurality of evenly-spaced rows of orifice ports, as seen in figures 1-3.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 7-11, 19 and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhind.

Regarding claim 7, Rhind discloses that as applied to claim 6. However, a pre-determined second pattern of orifice ports that includes seven rows of orifice ports has not been explicitly recited. On the other hand, it would be obvious to one with ordinary skill in the art to vary the number of rows, as they will impact the heat output.

Regarding claim 8, Rhind, as modified, discloses that as applied to claim 7. However, a predetermined second pattern of orifice ports proximate the distal end that are larger in diameter than the first five rows closest to the basal end, has not been explicitly recited. On the other hand, it would be obvious to one with ordinary skill in the art to vary the size and shape of the holes, depending on the desired output.

Regarding claim 9, Rhind, as modified, discloses that as applied to claim 8. However, a pre-determined first pattern of orifice ports that includes seven rows of orifice ports has not been explicitly recited. On the other hand, it would be obvious to one with ordinary skill in the art to vary the number of rows, as they will impact the heat output.

Regarding claims 10 and 24, Rhind, as modified, discloses that as applied to claims 9 and 23. However, two last rows of the predetermined pattern of orifice ports proximate the distal end that are larger in diameter than the diameter of the orifice ports positioned in the first five rows closest the basal end has not been explicitly recited. On the other hand, it would be obvious to one with ordinary skill in the art to vary the number of rows, as they will impact the heat output.

Regarding claim 11, Rhind, as modified, discloses that as applied to claim 10. However a first row of orifice ports on the first and second conical frusta sections that are equal in number to an aligned with the plurality of gas exit holes has not been

explicitly recited. On the other hand, it would be obvious to one with ordinary skill in the art to vary the alignment and number of ports, as they will impact the heat output.

Regarding claims 19 and 25, Rhind discloses that as applied to claims 1 and 20. However, means for feeding a controlled amount of gas to the gas exit holes that is variable thereby adjusting the heat output of the system has not been explicitly recited. On the other hand, it is extraordinarily well known in the art to adjust the heat output via a variable system. Thus, it would be obvious to one with ordinary skill in the art.

Regarding claim 22, Rhind discloses that as applied to claim 21. However, at least a last row of the plurality of evenly-spaced orifice ports proximate the distal end that are larger in diameter than the first row closest to the basal end has not been explicitly recited. On the other hand, it would be obvious to one with ordinary skill in the art to vary the number of rows, as they will impact the heat output.

Regarding claim 23, Rhind, as modified, discloses that as applied to claim 22 as well as a pre-determined second pattern of orifice ports on the second conical frustum section that includes a plurality of evenly spaced rows of orifice ports.

Regarding claim 26, Rhind, as modified, discloses that as applied to claim 25. Further, it would be obvious to one with ordinary skill in the art to further modify the invention to include a flame sensor that communicated with the exiting gas to provide

flame rectification of the burning gas for the purpose of enhanced function, since sensors are extremely well known in the art. Moreover, it would be obvious to have the sensor work in combination with the feeding means for improved combustion.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathryn Odland whose telephone number is (703) 306-3454. The examiner can normally be reached on M-F (7:30-5:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry A Bennett can be reached on (703) 308-0101. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KO

Henry Bennett
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